COVID-19 Vaccine Early Distribution

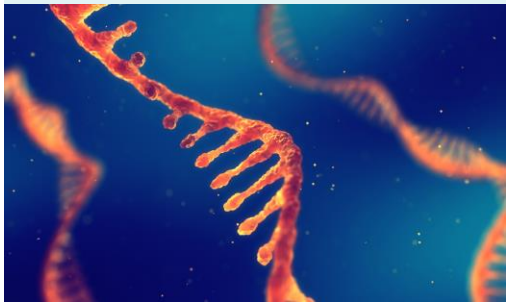
mRNA COVID-19 Vaccines

Overview

- mRNA vaccines—also known as messenger ribonucleic acid (mRNA) vaccines—are a new type of vaccine designed to protect against infectious diseases.
- Unlike traditional vaccines—which look to generate an immune response by placing a weakened or inactivated version or component of the germ into our bodies—mRNA vaccines instead teach our cells how to make a protein that triggers an immune response inside our bodies. That immune response produces antibodies to protect us from getting infected from the real coronavirus.
- mRNA vaccines are being held to the same rigorous safety and effectiveness standards as all other types of vaccines in the United States. The only COVID-19 vaccines the Food and Drug Administration (FDA) will make available for use in the U.S. (by approval or Emergency Use Authorization) are those that meet these rigorous standards.

Bottom Line

- mRNA vaccines are a new type of vaccine that use synthetic elements to get our immune system to create COVID-19 antibodies.
- Like all vaccines, COVID-19 mRNA vaccines have been rigorously tested for safety before being authorized for use in the U.S.
- mRNA vaccines do not contain the live virus that causes COVID-19.
- Side effects—such as fever, chills, muscle aches, joint pain, headaches, and redness and pain at the injection site—can mirror symptoms of a mild case of the flu and usually last for a few days.



How mRNA Vaccines Work

- COVID-19 mRNA vaccines give instructions for our cells to make a harmless piece of what is called the "spike protein." The spike protein is found on the surface of the virus that causes COVID-19.
- Once the instructions (mRNA) are inside your body's cells, each cell uses them to make the spike protein piece.
- After the protein piece is made, the cell breaks down the mRNA instructions and gets rid of them. mRNA from the vaccine never enters the nucleus of the cell and does not affect or interact with a person's DNA.
- Your cell then displays the protein piece on its surface. Your immune system recognizes that the protein doesn't belong there and begins an immune response by making antibodies.
- At the end of the process, our bodies have learned how to protect against future infection with the COVID-19 virus.

Benefits of mRNA Vaccines

mRNA vaccines have several benefits compared to other types of vaccines:

- mRNA vaccines use a non-infectious element, as well as shorter manufacturing times.
- mRNA vaccines can be developed in a laboratory using a DNA template and readily available materials. This template means the process can be standardized and scaled up, making vaccine development faster than traditional methods.
- RNA vaccines typically can be moved most rapidly for initial testing.
- mRNA vaccines ***do not*** affect or interact with our DNA in any way.

mRNA Vaccines Are New But Have Been Studied for Other Diseases

Until being approved for COVID-19 there were currently no licensed mRNA vaccines in the United States. However, researchers have been studying and working with them for decades. Interest has grown in these vaccines because they can be developed in a laboratory using readily available materials. This means the process can be standardized and scaled up, making vaccine development faster than traditional methods of making vaccines.

mRNA vaccines have been studied before for flu, Zika, rabies, and cytomegalovirus (CMV). As soon as the necessary information about the virus that causes COVID-19 was available, scientists began designing the mRNA instructions for cells to build the unique spike protein into an mRNA vaccine.

Possible Side Effects of mRNA COVID-19 Vaccines

While it's important to note that most people who receive the vaccine have no significant adverse reactions, some recipients report side effects that clear up within a few days. Most side effects are similar to symptoms associated with a mild case of flu: fever, chills, muscle aches, joint pain and headaches. Redness and pain at the injection site may also occur.

These reactions are normal and are more likely to occur after a second dose. It's also important to note that older adults (age 55+) have tended to report fewer and milder adverse events following COVID-19 vaccination.

These side effects are a result of a normal, healthy immune system responding to the vaccine and are a good sign that your body is building antibodies.

What You Can Do Now to Prepare

- Visit the VA COVID-19 Vaccine SharePoint Site for more information on VA's preparations for a COVID-19 vaccine.
- Check out the VA COVID-19 Vaccine site.
- Submit your questions through the COVID-19 Resource Room.

Resources

- Understanding mRNA COVID-19 Vaccines
- Explaining mRNA COVID-19 Vaccines
- COVID-19 Vaccine EUA Fact Sheets for Recipients and Caregivers
- COVID-19 Vaccines at VA
- Reporting Adverse Events